

General Forrest McCartney's

Oral History

Kennedy Space Center

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Dr. Henry Dethloff,

Ms. Lisa Malone,

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1 Roger Launius: I'm Roger Launius. We're here on the 26th of June 2001 at the
2 Kennedy Space Center. We're interviewing General Forrest McCartney and with me at
3 the table is Lisa Malone, Henry Dethloff, and Lee Snaples, and General, we'll just begin
4 by asking you a little bit about your background, where and when you were born and
5 grew up...

6

7 Forrest McCartney: Sure.

8

9 Launius: ...and you can go from there.

10

11 McCartney: Ok, fine, thank you. I'm Forrest McCartney. I was born in North Alabama,
12 a little community known as Fort Payne, Alabama, on March 23, 1931. It was a farming
13 community. My mother and father were both graduates of Auburn and, so my father
14 had electrical, very small electrical contracting business. My mother was a school
15 teacher when I was growing up and it was a, like I say, a small farming community, so it
16 was a rather uneventful time in growing up. Like all young people in that time period I
17 got interested in airplanes and then the war came along and my father was a reserve
18 officer. He went back to the war and came back in, just after World War II and opened,
19 reopened his business. I helped Daddy Mac at that time. I worked for the county one
20 summer on road construction. Figured out I didn't want to be in road construction, that
21 was for sure.

22

23 {background comments}

1 McCartney: Oh it really was Henry. I, it didn't take me long to figure there were other
2 things than that. Went through junior high and one year of high school, a couple of
3 years of high school there in Fort Payne. My aunt was a teacher there and between my
4 mother and my aunt both teaching they pretty well kept me in line. Then, went to a Gulf
5 Coast Military Academy the last couple of years, down in Gulfport, Mississippi, last
6 couple of years of high school. I left there and I went to Auburn. Auburn was the only
7 place to go. My mother and father of course being graduates in the early twenties, it
8 was the logical place for me to go in a state school. I studied electrical engineering and
9 graduated in three years. I went round the calendar. Those were the years that the
10 Korean War broke out and, so, I wanted to get out and try to get to Korea if I could. I
11 took ROTC there, of course, Air Force ROTC. My father was in the Air Corps and I
12 always wanted to be in the Air Corps. Didn't have any other desire to be anything but in
13 the Air Force. Got a regular commission out of ROTC, which at the time was fairly
14 difficult to do. Graduated in 1952. During my time in Auburn I had several jobs as well
15 as my parents helped support me, but I think I became pretty self sufficient. Worked for
16 Jake Hitchcock [at] Hitchcock Electric doing the things that an appliance store does,
17 selling and servicing appliances and these sorts of things, which of course I had picked
18 up from working for my father. As soon as I graduated from college I entered the Air
19 Force in the fall of '52 and was assigned to Warner Robins Air Force Base. I was in the
20 Air Materiel Command and among the jobs we had was the putting the communications
21 gear over on the Cape. So, I was working in that office and one of the projects was like
22 I say, refurbishing the original plastic cable lines over at the Cape. So in '52, late '52, I
23 arrived at the Cape the first time to oversee some of the work that was the engineering

1 responsibilities were in the office in which I worked in at Warner Robins Air Force Base,
2 Georgia. Obviously those were in the days when they were just starting to launch. The
3 GE, I think GE had a research vehicle and the guided missiles were there...

4
5 Launius: Right, right.

6
7 McCartney: The existence of the ICBM vehicles as we knew them, or IRBMs, was very
8 highly classified and, so it was a strictly air breathing types of vehicles. And I thought,
9 "This is pretty good," as a matter of fact, I could see myself getting bogged down. The
10 war was winding down in Korea and I knew I didn't have a chance to go there. I could
11 see myself getting involved in the aircraft maintenance business, comm maintenance
12 business, and I said, "I think there's something better in it than that," so I left Warner
13 Robins in the fall of '53 and went to the Air Force Institute of Technology and got a
14 graduate degree in Nuclear Engineering. I majored in weapon technology, since I
15 thought that would be what the Air Force would be interested in. This was the days of
16 the nuclear powered aircraft program was ongoing big then, as well as the, the
17 development of nuclear weapons. And was assigned to Albuquerque. Miss Ruth and I
18 got married in '53. And so, you know, it was a new adventure for us.

19
20 Launius: Sure

21
22 McCartney: We went out to Albuquerque, where I was stationed in '55 and soon after I
23 got there I had a couple of programs involved in some retardation devices. Parachutes

1 on special weapons, but the ICBM program, IRBM program began to evolve. With my
2 background in the weapon technology I got over in the reentry vehicles. And became
3 associated with General Schriever's organization on the west coast.

4
5 Launius: OK.

6
7 McCartney: And a great number of General Schriever's organization had moved from
8 the special weapons business out to the west coast. As a matter of fact most of them
9 had been in the weapon's business and when General Schriever started the western
10 development division it was just normal to gravitate there. Stayed in the ICBM
11 business. Got in the nuclear weapons system safety study business looking at the
12 relative safety from inadvertent, non-intentional detonation of the warheads. Stayed in
13 that until '59. Left Albuquerque and went up to Sunnyvale. Some of the crowd that had
14 been in Sunnyvale or in Albuquerque had migrated up to Sunnyvale. They had just
15 opened Sunnyvale and I got there for Discoverer II, I had missed Discoverer I, but
16 Discoverer II, one of the memories I had towards that, of course, was the orbiting of
17 Sputnik which I believe was in what '57?

18
19 Launius: Right.

20
21 McCartney: And fall of '57 and we had been duck hunting. Eddy Edleman, and I had
22 just come back from duck hunting when we had, I guess it had just occurred. We went
23 duck hunting that weekend. And that was disappointing that the US had not done that

1 initially, had not beat the Russians to it, cause it was obviously during the time when we
2 in a very adversarial position with the Russians. But I never really watched what NASA
3 did too much. My focus was on the ICBMs and the IRBMs because that was a, as you
4 know, that was a big thing for the nation. I was not involved in the launching of the
5 Gemini. A lot of the Air Force folks were in support of NASA. But I was not involved in
6 that, I was strictly worried about the weapons side of things. Went up to Sunnyvale in
7 1959. I got there for Discoverer II and had a great tour there. I was privileged enough
8 to be one who understand and knew what the Discoverer payload was.

9
10 Launius: OK.

11
12 McCartney: Of course, that's been the Corona program which has been declassified
13 and it was kind of interesting to get us all together a few years back up in Washington
14 when that occurred. But I really got into that part of the space program. I was one of
15 the first Air Force controllers to be able to control the on orbit resources. The
16 Discoverer was a very simple device. It had batteries. It had no solar power. So we
17 only had about 18 orbits worth of life. And you had to turn the equipment on and turn
18 the equipment off in conjunction with an onboard, preprogrammed equipment. And
19 trying to get all that synched up was a kind of an interesting job of acquiring the
20 satellites, determining where the tape was that turned the equipment on and off,
21 resetting it and synching the speed of that tape to the orbit. So orbital mechanics and
22 orbital command and control was kind of new at the time and I was fortunate enough to
23 be there and get all that going. [General] Schriever formed a group, he became [the]

1 Commander back at what became Systems Command. He formed a group to, really it
2 was in competition with the NRO. The country had not made the decision as to whether
3 or not they were gonna have an NRO or who was going to do that job and the CIA's
4 involvement was not clear at the time. So you know Schriever got some of us who had
5 hands on space experience and of course the Discoverer was a reconnaissance vehicle.
6 And he pulled us back on his staff and I was privileged to go back to Washington in I
7 believe it was the fall of '61. I would become one of his personal staff on space
8 business. We were building up an organization, the MOL was an up and coming
9 program at the time. And General Ritland, Osmand J. Ritland formed the Office of
10 Manned Space Flight there in [General] Schriever's staff and he had an office down at
11 NASA Headquarters and had an office out at Kennedy, I mean at Andrews. And that
12 was really the first time that I really started looking at what NASA was doing, what
13 NASA's plans were, and how they fit. So it was really in the early '60's that I saw the
14 relationship between the Air Force and never really looked at NASA. NASA at the time
15 was, as it is today, it was a very respected scientific group. And NASA's orientation was
16 of course toward the exploration rather than exploitation. Department of Defense was
17 really going hard and spending a lot of money. The ICBM's, the IRBM's had come in so
18 you know they were all being deployed and that was going along. And I got oriented
19 towards the space business after I really went up to Sunnyvale and in Washington I was
20 oriented toward the space business. Had several classified Air Force programs. About
21 that time the classification curtain went down. The WS, weapons system, 117L
22 program which had Discoverer, Midas, Samos became classified or what went on to
23 become classified. Had several classified programs. I also got into the communications

1 satellite business. And Advent had been canceled and a guy named Kuchman,
2 [General] Cushman, was starting up the IDCSP, which turned out to be the DSCS
3 Program. And of course NASA had orbited Syncom or shortly thereafter and we had a
4 lot of inter-relationship with them. As a matter of fact I was involved in the transition of
5 Syncom when it went over to the Department of Defense after NASA had deployed it
6 and had [finished] their useful work on it. Stayed there at Andrews on Schriever's staff.
7 Went off to a brief tour to a professional staff at the Armed Forces Staff College down at
8 Norfolk. Then went back to the Pentagon. I thought I was gonna go to Sunnyvale on
9 the MOL Program, but the MOL was canceled shortly thereafter so it was a good thing I
10 didn't. So I stayed there until '71 in the Pentagon with various and sundry space
11 programs and interfaced frequently with NASA, particularly on the transfer of
12 technology. And there was this scientific technology transfer, AACB, I believe it was
13 called, I'm not for sure on that. And I supported that. And that's where I met Bill
14 Anders, by the way Bill and I to this day are very close friends. And then in '71, I was
15 assigned to Patrick.

16

17 Launius: OK.

18

19 McCartney: Came down to the Eastern Range, I've always loved it here. I thought this
20 was just great. Came down to the Eastern Range. I had a couple of jobs, wound up
21 being Chief of Engineering for the engineering organization for the range, Range
22 Engineering. And then in '74 left, went to Los Angeles, still in primarily the space side of

1 things. I had a series of jobs there... I ran the programs, Program Director for a couple
2 of communication satellite programs...

3
4 Launius: OK.

5
6 McCartney: ...and another program there or two. In '79, by that time I had made
7 General Officer, went over to Norton for the ICBM. We were making, developing the
8 MX what's turned out to be properly named, Peacekeeper. And that was during the
9 early development days. A lot of interesting stories about trying to get that based.
10 Stayed over there until '81. Came back to Los Angeles as Vice Commander in
11 eighty...no I guess it was '82 when I came back. From '79 to '82 I was the commander
12 over at Ballistic Missile Office at Norton. I came back in '82, was Vice Commander for a
13 few months and then I became the Commander. In that time period the decision had
14 been made nationally, I had frequent occasion to interface with Dr. Hans Mark when he
15 was Secretary of the Air Force, and then of course he went over and became, I guess
16 the Deputy Administrator...

17
18 Launius: Right. For NASA.

19
20 McCartney: ...as I recall. But Dr. Mark was very instrumental, as you know, in getting
21 the Air Force involved in the Shuttle Program. I think Dr. Mark felt that the dependence
22 of certainly the support for the Shuttle Program would be greatly enhanced if the
23 Department of Defense was dedicated to using it. So national policy was made to

1 phase out the EELV's or the ELV's and to phase in the Shuttle. One of the biggest
2 money projects we had was of course SLC-6 or the Space Launch Complex 6 over at
3 Vandenberg readying it for the first launch of Shuttle. The other thing that the Air Force
4 spent a lot of money on, was creating a Command Control Center up at what's now
5 Schriever Air Force Base, it was Falcon Air Force Station, up just outside Colorado
6 Springs as a backup place to control the Orbiter from other than Houston. Concern was
7 at the Department of Defense that we would have everything invested in Houston for
8 command control and it would become the single...

9
10 Launius: Target.

11
12 McCartney: ...um-huh, a target in a single point failure, a single failure point. So we
13 put in, that's what Falcon was put there for. But I spent an awful of time interfacing big
14 time, with NASA, both in Houston as well as at Kennedy trying to figure out, because we
15 recognized that we could not build nor operate the Shuttle without intensive NASA
16 involvement.

17
18 Launius: Right.

19
20 McCartney: So Dick Smith was down at the Cape and we were dependent, there was
21 many people assigned from the Cape out to the West Coast to help us and of course
22 Houston was building or heavily involved in the building of the Command Center up at
23 Schriever Air Force Base, as we call it now, it was Falcon at the time. And the bottom

1 line to it was that the involvement with NASA became very intense at that time. I was
2 always very comfortable with that. It was never a contentious issue with me. I figured
3 that the country had made the decision to use the Orbiter. My job was to implement it
4 and as I said the Air Force was spending an awful lot of money out at SLC-6. I used to
5 go up there at least once a week, at least every Saturday morning..... towards the later
6 time periods there were other programs I would spend some Saturdays with, but to get
7 a status review at least once a week and Mr. Beggs came out a couple of times. Of
8 course Dick Smith was out several times. So that was moving along OK. As a matter
9 of fact, we had a couple of problems to overcome. We were supposed to fly I guess the
10 first mission off the West Coast if my memory serves in May or June, that time period.
11 And I don't think we would have made that. As a matter of fact, I know we wouldn't
12 have made that. But we would've made probably August, July or August. We had the
13 fuel and the oxidizer, LOX and hydrogen loaded at...

14
15 Launius: Oh really?

16
17 McCartney: Um-huh. The tanks, the reservoirs, storage tanks were loaded. We had
18 done cold-flows. All of the equipment had been checked out out there. We had one
19 major problem left to solve and that was how we were gonna handle the flame trench,
20 the burning of the hydrogen. You know they use the ROFIs here. And we didn't know
21 whether we were gonna use ROFIs or not out there. We had 2 or 3 schemes but it was
22 a matter of determining which approach, all of which would have worked. And we had
23 not made that decision. That was imminent when Challenger occurred. The other thing

1 we had not done, we had the flight hardware, the composite cased solids out there and
2 we had stacked them. We had the Enterprise out there and a flight ET and we had
3 stacked all of that and we were gonna do the twang test because out there we'd built up
4 on the pad as opposed to going out on a mobile launch platform as they do here and as
5 you know the timing of the firing of the solids is timed to the deflection of the solids
6 when the SSME's start, the whole stack as you know moves and it comes back and as
7 it hits top dead center here they fire the solids. And that constant with steel case here
8 and composite case solids out there plus the fact that we didn't have any mobile launch
9 platforms so with the physics of the situation we had to determine what the constants
10 were to time the firing of the solids. And that was just a matter of doing what we called
11 the twang test, displace and turn it loose and see physically how they moved. There
12 were questions in my mind about the solids, as to whether or not NASA could finish the
13 test that they needed to for the composite case. But to be fair with you a lot of the Air
14 Force had a tendency to look and try to see whether or not NASA could make their
15 schedules. That was not my concern. My concern was that they get this place ready to
16 go and get it there within budget and get it checked out and ready to go. And so I really
17 didn't worry about whether NASA could or could not meet their schedules. I had
18 enough things to worry about by myself. And as I say we were totally dependent upon
19 the support of Kennedy. One of the things that was of great concern to us is how we'd
20 conduct the countdowns. So it became a very common thing for me to come down
21 here for the countdowns to observe, to figure out how we would do it. So I was very
22 fortunate to come down very frequently for almost all of the launches. To be in the firing
23 room to watch and observe and try to figure out how we could take what was already a

1 successful standard operating procedure and move that out to the West Coast to make
2 it work. I came down for the Challenger. The launch was delayed several times as you
3 know. I guess we tried it on Saturday and it didn't... called it off for some reason or the
4 other, weather of course. Sunday we didn't try it. That was Superbowl Sunday. And
5 Monday we tried it and I had been down here so long you know several days and I had
6 so many responsibilities still on the West Coast that I said hey after we scrubbed on
7 Monday I said and I think we scrubbed for fog on Monday as I recall, as least I think
8 that's what we scrubbed for. We certainly scrubbed for some reason as I recall on
9 Monday. I said I've got to go back to the West Coast and a plane had come in to pick
10 me up. So I went back to the West Coast that night. And I guess we launched on what,
11 Tuesday?

12

13 Launius: Yes.

14

15 McCartney: And I was in the office and was not watching the launch, but I was in the
16 office working on some other matters when they came in and told me that we'd had the
17 Challenger failure. And of course like everybody it was a very major concern to all of
18 us. We didn't know what that meant for the Air Force. There was a part of the Air Force
19 that felt like that they wanted to continue the expendable launch vehicle program very
20 strongly. Pete Aldrich had been successful in getting the 10 more Titans... approved.
21 CELV, Complementary Expendable Launch Vehicle Program, saying that we needed to
22 cover the transition. And the concern quite frankly was that all the Titans were carrying
23 and it is now known they carried the NRO Payloads. And NRO Payloads are heavy and

1 nothing else can carry them except the Shuttle. Transition to the Shuttle was certainly
2 what Dr. Mark was pushing before he left the Air Force, what he was pushing and
3 properly so when he went to NASA. But the transition, we could not afford to drop the
4 ball because the importance to national security particularly at that time of those heavy
5 payloads was just paramount. So there was both of the ELV Program as well as the
6 Shuttle Program. And we really didn't know what that meant to us when the Challenger
7 went down. One of the things I did when I was at Los Angeles in the Space Division is
8 when I went down to interface with the astronauts as well as the folks down at Houston
9 quite a bit. It became obvious to me that the Navy had pretty well got things fixed up to
10 where their astronauts felt linked in to the Navy. And as it was shown many of them
11 transitioned back, Truly being one.

12
13 Launius: Right.

14
15 McCartney: And the Navy kind of looked at them as still their own and still on loan to
16 NASA. The Air Force, I believe I would describe it, looked at them rightly or wrongly as
17 out of sight, out of mind. Our job is to fly and fight and they're not doing that. We
18 certainly support the NASA program but there was certainly not the linkage between the
19 Air Force and the Air Force astronauts. So I felt that was something I could work on.
20 We had an office down there, an office that belonged to me full time down at Houston to
21 promote that transition. I have to tell you a funny story about that too, by the way. And
22 not that office, but Jerry Griffin was the Center Commander, not Commander, Center
23 Director. And so I took a job to try to make sure that the Air Force folks felt like they

1 were a part of the Air Force. In that exercise I got to know Ellison Onizuka very well, so
2 Ellison's loss was a very major blow and one of the tragedies that we in the Air Force
3 felt very strongly. The interesting story, and I'll get back to Ellison in a minute, about
4 Jerry Griffin was that I told Jerry, I said, "Jerry who's gonna fly, be the first pilot of the
5 first mission off the West Coast?" and he came back to me and said, "Crippen." I said,
6 "The hell he is." And I've told Crip this story too. I said, "We've spent billions of dollars
7 and a lot of F-16's we put out here in this thing." And then the intense rivalry between
8 the Air Force and Navy and I said, "For a Navy guy to fly the first one off the West
9 Coast. No way."

10
11 {laughter}

12
13 McCartney: And Jerry wrote me and I wished I'd kept it, he wrote me about a 10 or 12
14 page hand written note as to why he selected Crip to fly the first one. And it was, he
15 had all the firsts, all the things that Crippen had done and the first we were to encounter
16 on the West Coast and I'm very sorry I never kept that note.

17
18 {laughter}

19
20 McCartney: But it was very logically laid out and he was right. Crippen was the right
21 person, he was the most experienced person. And Crip and I to this day are extremely
22 close. We are the very best of friends. We used to fly a lot together here as a matter of
23 fact. But at any rate, almost everything, almost all my time was occupied with

1 interfacing with NASA to try to get ready to fly the Shuttle. This was '82, let's see
2 Challenger occurred when, '83...

3

4 Launius: '86.

5

6 McCartney: '86. So this would've been eighty probably '84, particularly '85, '84 and
7 '85, '85 just about, I'd say you know, ¾ of my time was spent interfacing with NASA for
8 one thing or the other. There was a memorial service [in Hawaii] for Ellison. He was a
9 Buddhist and they have a unique service and Pete Aldrich came through. Pete was
10 Secretary of the Air Force at the time. He was supposed to fly off the first vehicle off the
11 West Coast as a matter of fact. But he had become Secretary of the Air Force by then.
12 And so coming back [in] the airplane [with Pete], this was '86, [I talked to him about
13 going to NASA]. The Air Force has a mandatory retirement in 35 years [and I had only
14 about a couple of years before mandatory retirement from the Air Force].

15

16 Launius: Um-huh. Right.

17

18 McCartney: So in the fall of '87 I was gonna have to leave the Air Force. So I told Pete
19 at the time I said, we were coming back, we talked about several things. One of them
20 was naming something after Ellison and we named the Sunnyvale facility as the
21 Onizuka Air Force Station. Pete and I decided that coming back from the memorial
22 service. And I told Pete, I don't remember whether it was coming back that we talked
23 about it. But at any rate Secretary Aldrich and I were in constant communications with

1 one another. But it became obvious that if NASA was going to change management at
2 Kennedy if that opening occurred I would like to be considered. So Dr. Fletcher was the
3 Administrator of NASA by then.

4
5 Launius: Sure. Um-huh.

6
7 McCartney: So I went over to see Dr. Fletcher and told Dr. Fletcher that I always
8 wanted to come back down here. This was my intent to come back down here and I
9 couldn't think of a place that would be better for me to come and be a continued part of
10 the space program than at Kennedy. That if there was a vacancy that occurred at
11 Kennedy for a responsible position I would request that he consider me. He said he
12 certainly would consider me. So when Dick Smith decided he wanted to leave, Dr.
13 Fletcher selected me and Pete Aldrich supported me, much to the chagrin of some of
14 the Air Force because there were a set number of slots for General Officers in the Air
15 Force, particularly 3 and 4 stars and at that time I had 3 stars. And Pete Aldrich
16 supported me and Dr. Fletcher agreed to send me down here on active duty.

17
18 Launius: Oh.

19
20 McCartney: So not many people really knew that or it wasn't hidden, but it just never
21 really was that much of a well known publicized thing that I came here on active duty
22 and remained on active duty from the 1st of October of '86 until the end of August of '87
23 which was the mandatory retirement. So my initial year here was on active duty. If you

1 came to my office I had my Command flag in the office but I never wore my uniform. I
2 never. . . and that's why people picked up on my rank. They asked me. . . there was
3 much concern about me coming here. I didn't realize it. I wasn't as concerned I think
4 as the people here, but they didn't know what they were getting. You know, here's a
5 military guy replacing Dick Smith and they didn't know me that well. And so they really
6 didn't know how I would conduct myself or how "militarized" I would be. I think they
7 envisioned things far differently than it probably turned out to be. At any rate, I was on
8 active duty for the first year here and people asked what should they call me. And I said
9 you can call me anything you want to.

10
11 {laughter}

12
13 McCartney: So some people liked to call me by my first name, some by Mister, and
14 some by my military grade. And I really didn't care. So I came on the 1st day of October
15 of 1986 and it opened up an entirely new phase of existence. Once I came down here,
16 the Air Force never considered me in the Air Force. They didn't, I wasn't anti, they
17 weren't anti-me, but the point of it is is that once I was assigned to NASA I became,
18 even though I was on active duty, I was a NASA employee and recognized as such. So
19 my career with NASA although it was a very close relationship up until the 1st of October
20 with NASA at Kennedy starting on the 1st of October of '86. And that's how I got here.

21
22 {laughter}

1 Henry Dethloff: That's quite a story.

2

3 Launius: Yeah, it is.

4

5 McCartney: Now that, I think was what your questions were really oriented toward.

6

7 Launius: Right.

8

9 McCartney: And I thought, well it would be best to just cover that mound...

10

11 Launius: That's fine.

12

13 McCartney: ...with you rather than...

14

15 Launius: Perfect.

16

17 McCartney: ...pick things out.

18

19 Launius: OK. A couple of things I'll just ask you about.

20

21 McCartney: Surely.

22

1 Launius: You worked on the MOL Program for a while. There was obviously some
2 trepidation in NASA that the military was going to have a program that had astronauts.
3 Did you sense any animosity from the NASA side of the house on that?

4

5 McCartney: No. There may have been. My concern is how are we going command
6 and control that thing once we...

7

8 Launius: Right.

9

10 McCartney: ...get it up there. I mean you know the logistics of getting it up there,
11 operating it, and as you know the long list of people who were in the MOL Program,
12 including I think Crippen and Truly, and many others. But it was, I'll be fair with you,
13 folks who have a lot of animosity and that kind of thing have got too much time on their
14 hands.

15

16 Launius: {laughter} OK.

17

18 McCartney: You know that's for policy makers. I oriented myself more toward trying to
19 figure out whatever the situation was to make it work. As a matter of fact, my style
20 when I came here to Kennedy, and I think I told those people at Kennedy I didn't see
21 anything that was broken. And if you will look at the organization as it was when I came
22 and as it was when I left, which I guess was the end of December, the last day of
23 December of '91, there were no significant changes in the organization if you look at the

1 chart. General Schriever had a saying which I have used many times and I believe it. I
2 think General Schriever was absolutely right about it. He said, "People make things
3 happen. Not organizations." And you can take any organization, my philosophy is you
4 can take any organization and if people want it to work, it will work. And if people don't
5 want it to work, it won't work.

6
7 Launius: Right.

8
9 McCartney: So it becomes a matter... and certainly organizations make things easier.
10 You can facilitate things by different organizations. But my point was, is that I didn't see
11 anything that was broken, so I didn't see anything that needed any big revisions. So, no
12 I didn't detect, I'm sure there was animosity and I'm sure there was a lot of gotcha's and
13 that sort of thing. Cause you know all the astronauts in those days were test pilots.

14
15 Launius: Sure.

16
17 McCartney: Or at least almost all of them were test pilots. Yeah, the Gemini/Mercury
18 crowd were. And so it was in those days and test pilots are all fighter pilots and fighter
19 pilots all have a characteristic that inherently makes them competitive...

20
21 Launius: Right.

1 McCartney: ...and properly so. So there was, I'm sure, a lot of competition but I didn't
2 feel any of it.

3

4 Launius: OK. All right. You talked about building up Falcon Air Force Station for
5 launch or for mission control at SLC-6. How was the plan to work? If you were going to
6 launch out of the West Coast from SLC-6 on the polar flights for satellite recognizance,
7 was the primary going to be at Falcon or was that a secondary?

8

9 McCartney: Not initially.

10

11 Launius: OK.

12

13 McCartney: Not initially. My attitude on it all was that we don't really have any
14 experience in this business. The one thing you asked me to cover, which I neglected to,
15 I was at Norton when Crippen and John Young flew.

16

17 Launius: Um-huh. Yeah.

18

19 McCartney: Once I became involved in this Shuttle thing, it became very obvious to
20 me that this is not amateur night.

21

22 Launius: Right.

23

1 McCartney: You know this is an entirely different business than the Air Force has ever
2 been in. And while there was some parts of the Air Force that were more aggressive
3 towards taking roles and missions, I never viewed NASA as trying to do the DOD job. I
4 viewed NASA more as a organization that had experience and we didn't. And as a
5 space business which a lot of the Air Force did not understand at the time, is not
6 forgiving. It's a very unforgiving business so I wasn't in any hurry to make a mistake. I
7 wasn't scared of the program. But I think I was, to pat myself on the back, I think I was
8 smart enough to understand that we should look to the experienced people to gain as
9 much knowledge from them relative to processing the hardware, relative to launching
10 the hardware, and certainly controlling the hardware until we could develop an expertise
11 in the Air Force that would allow us to assume that. So no, Houston was to run the
12 early missions out from down there. And that caused a lot of concern in the Air Force
13 relative to security and there...

14
15 Launius: Sure.

16
17 McCartney: ...were things that we had to do to, I'll say, section off parts of the Houston
18 operation too from Mission Control. But it was all doable and it was, I thought, the right
19 thing to do and I think that, I really believe we would have had successful missions out
20 of the West Coast. No question in my mind about that.

21
22 Launius: I can't imagine that you wouldn't have.

1 McCartney: The only thing that was an uncertainty to me was the solids and that was
2 just because they had never flown them before. But the rest of it, if we could have
3 overcome some environmental concerns, and I'm sure we would have. But, no,
4 Houston was to do the Mission Control.

5
6 Launius: OK. Alright. And my understanding was that by the time of Challenger
7 SLC-6 was ready to go. Is that correct?

8
9 McCartney: It absolutely was.

10

11 Launius: Yeah.

12

13 McCartney: Like I say, we would probably not have made the May, June date, but we
14 would have been a couple or three months late.

15

16 Launius: OK.

17

18 McCartney: But we had cold flowed everything. The Enterprise, on the Pad, was
19 checked out. It was a couple of things to tidy up, but no question in my mind that we
20 would have made July or August.

21

22 Launius: OK, all right. Did you have any questions, Henry or Lisa, at this point?

23

1 Dethloff: When you came into KSC, apparently it was a very, relatively easy
2 transition. There was no real opposition, hostility, etcetera, etcetera, but what about the
3 atmosphere, the attitude, the feeling of the people here. There was a personnel
4 problem, I...

5
6 McCartney: Well, there was a big personnel problem. The problem was that they had
7 been laying off and this whole economy around the northern part of the county is tied to
8 Kennedy and, you know, layoffs are always extremely painful.

9
10 Launius: Oh yes.

11
12 McCartney: And there are two or three things I did when I came, a lot of it I just played
13 by ear, but when I came the layoffs had occurred and we didn't have another single
14 major layoff after I came. So I really hit it, I'd say, at the lowest point of morale and so
15 we began on the upswing at the time and, so, no, there was no animosity at all. I think
16 that there was a lot of uncertainty as to how I would run this place, just as you would
17 expect there to be with not only a new Center Director, but a person who had come
18 from somewhere outside of NASA, in particular a military type of thing, so there was a
19 lot of uncertainty, but I didn't feel any hostility. The...

20
21 Dethloff: What about the post-Challenger syndrome I guess you would say in
22 morale?

23

1 McCartney: It really was. Everybody was down and they didn't feel very good about
2 themselves. The papers were not very kind. I don't know if Lisa ever noticed this or
3 not, Chuck Hollinshead was running Public Affairs at the time, and, but the second day I
4 was here I had a news conference. And that was an uncertainty also by the news folks.
5 In the Air Force I specifically avoided them. Everything we were doing was classified
6 and their tendency particularly for people like Av week and those...

7

8 Launius: Right.

9

10 McCartney: ...investigative type of reporters was to try to get information that would
11 allow them to have an insight that I didn't think was in the best interest of our national
12 security. So I just avoided them. At great extremes I went to avoid them. It became
13 very obvious to me in looking at NASA that NASA needed to have an open rapport. So
14 the second day I was here we had a news conference and I essentially told them that I
15 would tell them everything I knew. I felt that I was obligated and obliged to keep them
16 fully informed of what was going on, both the good news as well as the bad news. I had
17 that obligation to do that in a timely way, not to play games with them. And I would live
18 up to my obligations and their expectations in this area, but in turn they owed me the
19 responsibility on their part to accurately report it in context. And I will say to the day I
20 walked out of here, they always did. You know, I thought it was a great rapport I had
21 with the press, with the news media, both television as well as the newspapers, or, as
22 we call the written media, and I can't think of a single time that they ever took what I
23 said out of context. Sometimes the news that we talked about wasn't all that good, but,

1 hey, you tell the facts. And so I had a tremendous rapport, I thought, with them, I told
2 them they could call me anytime of the day or night that they wanted to.

3

4 Launius: Right.

5

6 McCartney: Gave them my home phone number, the whole bit. And so I had a great
7 rapport with the news folks and I'll always be grateful for that and I think the relationship
8 we had with Public Affairs was, I don't know, Lisa you were there at the time, but I think
9 they became, took on a little bit different, what do I want to say, flavor or direction. I
10 used to have what the Air Force calls "stand up" every morning. It was my management
11 style. We didn't stand up, we sat down, but there were about five or six of us that sat
12 around each morning for about 15 or 20 minutes and there were a lot of folks who
13 wanted to come to the meetings and I said, "no, no". I just want, you know, just to
14 review what happened yesterday, what's going to happen today, that we need to know
15 this kind of thing and the Public Affairs people were always a part of that.

16

17 Dethloff: Could you name any other groups that were particular or individuals that
18 were particular?

19

20 McCartney: Yeah. Andy Pickett.

21

22 Launius: Right.

23

1 McCartney: George English. Bob Sieck. Chuck Hollinshead. Utsman and then Gene
2 Thomas and I think I named George English and myself. Had it there in the office
3 around a table. And I didn't want it outside of the room because it. . . and all the
4 astronauts. They knew they had. . . and another thing I did within the first two or three
5 or four days of arriving here is I got George Abbey and John Young in here. And I had
6 brought all of my flying gear from the Air Force. I had gone through the altitude
7 chamber so I had a current ticket certification and I got them in here and I said to them,
8 that you know, I'm not playing games with you. You don't play games with me. I don't
9 play games with you. Any time you got a problem you call me. If you're concerned
10 about it, I should be concerned about it. If I don't have the answer that makes you at
11 ease, then hey you, I need to know about it and go get that and the Astronaut Corp has
12 an open door policy to walk in here any time they wanted to, so quite frequently the
13 astronauts would come and, quite frankly, I cultivated the astronauts. They were our
14 customers. They had confidence to put their lives in our hands. They ought to feel
15 good about it.

16

17 Launius: Right.

18

19 McCartney: And I played a lot of them racquetball.

20

21 {laughter}

22

1 McCartney: Beat a lot of them too. A little hard for them to take, but the bottom line to
2 it was that I felt like I had a very good rapport with the astronauts and they came to
3 those meetings.

4

5 Dethloff: One more related...

6

7 McCartney: Sure.

8

9 Dethloff: ...question if you don't mind.

10

11 McCartney: Not, not at all.

12

13 Dethloff: Shortly after you arrived you began apparently a pretty substantial
14 construction building program and you made a comment that really impressed me in the
15 Spaceport, at least it was reported in the Spaceport News. This was your comment,
16 that "the space program at KSC is not a temporary effort."

17

18 McCartney: You got it.

19

20 Dethloff: And could you comment on that a little bit? What were you building, how
21 that...

22

1 McCartney: Sure. Yeah, absolutely. One of the things that I felt like is that my
2 background and belief is that, you think and you become what you think. I always have
3 felt and I still feel that a very vital part of this nation from many, many aspects is a very
4 robust space program. Department of Defense, it's important for national security. The
5 commercial people, it's important for our economy, and for NASA it's important for
6 exploration. And there are so many spinoffs on that including education and an
7 incentive for people to stay in school, but that's a whole other list of things that I feel
8 strongly about. But it bothered me very much to go out there and see our people in box
9 cars. You know, I think they're not hobos. And I know how they got there you know,
10 the office facilities and the VIB was... I guess it is VAB, isn't it? It took me a long time
11 when I went over to Kennedy I mean to the Cape to start calling that the VIB, now I
12 need to get back to the VAB, Lisa. You know it was a pyrotechnic facility and they had
13 to move those people out of there. And I don't fault the folks for scrambling to do what
14 they had to do, but it was a temporary sort of a thing. And I really felt that you know,
15 people who go to work in a boxcar, they're not hobos. You're not a second class
16 citizen. You know Chappy James was [a General in] the Air Force and he wrote a letter
17 once for the, oh. . . Freedom Foundation I guess it was, up at Valley Forge. I think
18 that's what it was. At any rate, he wrote, and I've always been impressed by it, he says,
19 "I am a black man and as such they tell me I'm a second class citizen and I tell you no
20 one is a second class citizen unless they think like one, act like one, and perform like
21 one." And I did not think our people ought to be second class citizens. They were not
22 second class to anybody. And they did not think, they did not act, they did not perform
23 as second class citizens. They were first rate and I felt like that we needed to get them

1 out of those box cars because while that was the right solution at the time, I was very
2 sensitive to trying to improve, to get the people feeling better about themselves. So
3 we... the first effort was of course the Office Support Building and we got enough
4 money to build the first four floors of that. And Bill Nelson was instrumental in getting
5 enough money added to add the two, the fifth and sixth floors, so I always told Bill the
6 top two floors were his and the first four were mine. But I felt very strongly that the
7 biggest thing we needed to do at Kennedy was to get our workforce feeling good about
8 themselves.

9
10 Launius: OK.

11
12 McCartney: And so I sought things that would be responsive to them to let them know
13 that what they thought they wanted and what they needed was, I felt was my job. My
14 job, I didn't see anything broken. Now if I have any long suits in management it's to
15 take a now condition and try to get it working. I never have been long-sighted. I am not
16 a strategic thinker. To think about what this organization should be doing ten years
17 downstream, that never bothered me. I was worried about returning to flight, building
18 back up, so during my tenure here I focused on the here and now.

19
20 Launius: OK.

21
22 McCartney: It was that. And there are many other things Henry that we did that
23 reflected what the workforce wanted to do. I remember I walked out there very early on,

1 and I'm not talking about within the first few weeks I was here, and one of the workers
2 called me aside and always when I toured usually George, sometimes George English
3 went with me, but it wasn't, you know a bunch of folks. I'd just go around and sit around
4 and talk to the folks to see what was bothering them. And he said, "You know we got a
5 problem here and I've brought it to my boss's attention and he won't do anything about
6 it and I've got pictures to prove it." And I'm thinking you know, fraud, waste, abuse, all
7 of that kind of stuff. You know what the problem was? The birds used to roost over on
8 the pipes between the Orbital Processing Facility and that building there right there next
9 to it. So the two OPF's, OPF 1 and 2, and the building that was right there that they
10 built to it, that bigger building, and it was a mess getting into work and quite often it was
11 not a pleasant thing with the birds up there.

12
13 Launius: Right.

14
15 McCartney: And he said, "You know," he said, "it's not the right thing to do." I said, "I'll
16 fix that." And I made a big effort to fix that and you know, interestingly enough, I came
17 back and a couple members of the staff started talking about ultra-frequency devices.
18 And I said, "Just go out there and put a screen underneath that thing and I want it done
19 very soon." I remember another time a guy called me aside and said, "You know," he
20 said, "how come we don't have a flag at the south entrance?" He said, "You come in
21 from Titusville, you've got a flag." Said, "We've got a flag pole, but we never have a
22 flag." I said, "I can fix that." Well you know, that night they had a flag. So it was things
23 that you do to make the workforce feel like that you care about them. They are

1 important because they are important. There is none better than they at this business.

2 I used to tell them this frequently, "There is no one better in the world anywhere at doing
3 what you do than you are." So my effort was one towards trying to get them to feel
4 good about themselves.

5

6 Launius: Yeah. Lots of people have talked about how you focused on quality of life
7 issues, day care centers,...

8

9 McCartney: Yeah, that's an interesting story.

10

11 Launius: ...things of that nature.

12

13 McCartney: Yeah, that's an interesting story.

14

15 Launius: Well, would you care to elaborate?

16

17 McCartney: Yeah. I felt like that, you know, we were gonna need a day care center.

18 We had a lot of folks out here whose mother, you know, mom and pop, worked out here
19 and their children were important to them and should be. I am a strong one on family
20 life. And so I said we ought to have a day care center. I put one in at LA and I thought
21 we ought to have one here. Couldn't get any money for it. So old, who had

22 Development Engineering?

23

1 Lisa Malone: Minderman?

2

3 McCartney: No. It was after that.

4

5 Malone: Walt Murphy?

6

7 McCartney: No. It was before Walt. Jim Phillips. Jim Phillips and I and the lawyer,

8 Perry, Ed Perry, and George English and we got to thinking now how do we get

9 something built out here. So we devised a scheme, I'm not sure how legal it was, but

10 Ed Perry said it would come home to roost so far after we were gone it wouldn't matter.

11

12 {laughter}

13

14 Launius: OK.

15

16 McCartney: So we developed a scheme in order to get that thing built down there on a

17 thirty-year lease. And we selected probably the wrong contractor, but at any rate we

18 had, I think there were three or four bids, and we got ourselves a child care center.

19 Now as it turned out the company that built it I think wound up abandoning it and I think

20 the NASA Employees Organization now has it, is managing it. But the point of it is that

21 we had nothing and I felt very strongly that we ought to have a child care center and as I

22 understand it, it's very successful. People over at the Cape were wishing that they

23 could get their kids in the child care center. But you know, it was the right thing to do. It

1 was the right thing to do for the people and for the workforce. And I've always been a
2 very strong believer that if you take care of the folks, they'll take care of you.

3

4 Launius: Sure.

5

6 McCartney: And my job, I always viewed my job was to facilitate and remove the
7 impediments that they had to do their job. They didn't need my help in telling them how
8 to do their job. They could do their job much better than anybody else in the world
9 could do. So all they needed to do was to get folks out of their way and to give them the
10 tools necessary to do their job.

11

12 Launius: OK. We have to stop at that point and she's going to have to change
13 tapes. If you want to stand up and stretch your legs, you're welcome to do that.

14

15 McCartney: Is this what you wanted to accomplish?

16

17 Launius: You bet! You bet! This is great.

18

19 **Part 2:**

20

21 McCartney: OK. And now what are we going to talk about?

22

23 Launius: Well, let's talk about recovery from Challenger.

1 McCartney: OK.

2

3 Launius: Which obviously was one of the most important things you were working...

4

5 McCartney: You bet.

6

7 Launius: ...when you...

8

9 McCartney: You bet.

10

11 Launius: ...first got here. You talked about trying to rebuild the morale, which was

12 undoubtedly decimated.

13

14 McCartney: It really was, the work force did not feel very good about themselves. The

15 press had nothing good to say. And good people, and that's what they had here, good

16 people, dedicated people and as we know, to this day, they had the finest workforce I

17 think anywhere in the world. Just want to do good things and everybody wanted to get

18 back flying again, so we started hiring, recalling, and, I used to say, and by the way

19 Congress wanted us to get back flying, we had enough money to get back flying and so

20 we had everything just ripe to build back up again. Congress, the nation was with us

21 and of course the local people were fanatical about getting back flying again. That's

22 what it's all about here. So, it was the right environment and, and it was not hard to

1 stimulate them and get them going. I think the thing that I always regretted about
2 getting back flying it took us so long.

3

4 Launius: Yeah.

5

6 McCartney: It was longer than I thought we needed to take but people are very
7 cautious. We were not the pacing path here that it was the development of the solid
8 rocket motors and the modifications that they needed to make that and the other things.
9 There are several things that we did I think that came out of that that were very good for
10 the program. First of all we went through and I think we did things that were wrong.
11 One of the things that we did was wrong we rewrote the procedures. We should have
12 redlined them. You know, rewriting them was probably a task that... certainly the
13 procedures I think were better in many respects but perhaps in thinking that over again
14 we probably would have been better off redlining them. But we did a lot of things that I'll
15 call it kind of tidied up the processing. You know, and I'm sure to this day you don't roll
16 the Orbiter with open work on it, any open work is very limited and I was involved in
17 making the decision as to whether or not we rolled it. One of the things that was a
18 problem then and I was very sensitive to and I don't how much of a problem it was after
19 I left or how much of a problem it is today, but I kind of felt like that the other Centers
20 looked upon us as their workforce. And I didn't like that. You know, they'd come in on
21 our territory and tell us what to do, how to do it, when to do it, and where to do it and I
22 didn't think that was right and I don't think it's right now if they still do it. I certainly didn't
23 think it was right then so I tried to make sure that we were a voice in what was going on,

1 that we did have a vote and that we exercised our vote. And I felt very strongly that we
2 should be held accountable for our vote. But it was very clear to me, particularly
3 towards the end of my tour that, and I feel about it today that way, the expertise of the
4 Shuttle, or the Orbiter, Shuttle, is here. Now that may not be the case situation for
5 SRB's and ET's because those are still being processed and refurbished and built. But
6 those Orbiters were built and the workforce here knows more about those than the
7 people anywhere else. The engineers that put them together, that designed them and
8 put them together certainly were the most knowledgeable for a long time, but like
9 everything you know, that's an aging workforce and it moves on through retirement and
10 attrition and so forth, and so on, so the bottom line to it is that these people here
11 understand that machine and what to do to the machine and what will work and what
12 won't work better than anybody else. And I felt that very strongly. They ought to have a
13 say so in it. And sometimes that caused a little bit of a rub. I felt like that, quite frankly,
14 we ought to be a very big voice, if not the voice in saying whether we flew or not.

15

16 Launius: OK.

17

18 McCartney: On one of the missions and I don't remember which one that was, that
19 was a major issue between myself and Dr. Lenore and we all wound up out in Houston,
20 but we didn't fly. Because I wasn't comfortable flying and I was not going to be a part
21 of... and I think the astronauts understood it, as a matter of fact I know they did because
22 after that was over with a couple of them came to me the next day and thanked me.
23 Because I said I'm not flying that machine. We don't understand that problem. We

1 rolled it back. It's when we had the cracked hinges on the ET door frame, the frame
2 around it was cracked. Aaron Cohen, to my surprise, would fly it. And by the way that's
3 another thing that I sensed when I came here. I sensed that the rapport between
4 Marshall and Johnson and Kennedy could be strengthened.

5
6 Launius: Oh, yes.

7
8 McCartney: So I bet you if I didn't hear from Aaron Cohen, see Aaron came and J.R.
9 Thompson came all about the same time I came.

10
11 Launius: Right.

12
13 McCartney: So I made it an effort to call Aaron particularly, or to have at least
14 communications with him at least two or three times a week. If nothing else just call him
15 up and say, "How are you doing Aaron?" But at any rate I just felt strongly that if the
16 wheels came off we would certainly be accountable, and properly so. So I was gonna
17 have a vote in it. And so that was one on the things that I tried to turn around was not to
18 be the dominant person, but we were equal at the table and whether we roll, that that
19 was our decision to make and that was a constant fight, you know. But I think we wore
20 them down.

21
22 Launius: OK. {laughter}

1 McCartney: But we began to hire again and we made some investments in tools, a lot
2 of big investment in tools, and investment in training and we got several training efforts
3 going in conjunction with the local community college. And it was just, it was a good
4 ride you know. We got back flying again. Space Station had not yet really got going
5 very well when I left. It was still in its early days and while we had a Space Station
6 office and C. M. Geisler was running that. It was, if I can use the expression, the early
7 formative days, and the program had not migrated to what it is today so. We did break
8 ground on the station, what do we call that building over there now?

9

10 Malone: Space Station Facility.

11

12 McCartney: Yeah. But that was under construction. We broke ground on it just before
13 I left.

14

15 Launius: In the return to flight effort, were there any particular changes in the
16 process of quality assurance and safety review and things of this nature? Or just a re-
17 emphasis of...

18

19 McCartney: I think it was a re-emphasis. I mean you can dress it up two or three
20 ways. One of the things that is important and then I'll get back to that question, there
21 was... uncertainty as to what to do with the Shuttle Processing Contract. If you'll recall
22 and Roy Estess came in here and did a study on it and Roy and I talked a long time
23 about that. And I didn't feel like anything was broken. You know, it was my opinion that

1 the Challenger would have occurred given whoever had processed that Orbiter, that the
2 processing was not the problem. The problem that needed to be addressed was
3 elsewhere other than processing. And I didn't know what we'd gain and every time you
4 reorganize it is an enormous upheaval.

5
6 Launius: Right.

7
8 McCartney: And the Shuttle Processing Contract at the time appeared to me to have
9 done exactly what NASA wanted them to do. You know, that's the way they were
10 incentivized. They were doing what NASA wanted them to do. And they were making
11 decisions that did not cause Challenger, but certainly in retrospect the Presidential
12 Committee had comments on those decisions and as you know the contractors
13 changed to not incentivize them to meet schedules so much and NASA's attitude was
14 changed. You know this thing was to be an airline and I think that was flawed thinking
15 on NASA's part. And I think NASA recognized that and it was an emphasis, the
16 emphasis was redirected. But Roy Estess ought to be, make sure you touch base with
17 Roy on the decisions on to keep the SPC intact. Because that was, I didn't realize the
18 importance of that decision at the time, but Roy and I talked about it a long time and he
19 recommended it and I think it was a very prudent and proper recommendation that was
20 accepted. You always get, when people do Monday morning quarterbacking, they
21 rightfully see things that, areas that could be improved and rightfully so that they were
22 pointed out. Among them were, the safety, the quality, and on and on and on and on.

1 ...and by the way those areas are areas that today I don't care what state they're in
2 today they can be bettered.

3

4 Launius: Sure.

5

6 McCartney: And that goes on this side of the river and on the other side of the river at
7 the Cape just having come out of fooling with expendables for six years. You never get
8 perfect in this. Anytime you get perfect, you just think you're perfect, you're either
9 fooling yourself or you're not connected with reality. The workforce changes. It attrits, it
10 gets older a year every year. Folks retire and new folks come along trying to capture
11 the tribal knowledge as it's sometimes called. All of that is a constant active effort that
12 just has to be addressed. And quality, shoot we never had a significant quality problem
13 here. So I'd say it was a re-emphasis of it. Boy I am a big, big believer in several
14 things, but among them is that understanding what we're doing to ourselves and seeing
15 what we need to do, not in a punitive way, but to see what we need to do to preclude us
16 from doing the same mistakes over and over and over again. So you know, and one of
17 the morning things we'd be discussing in the morning stand-ups are, things that,
18 incidents that occurred. Like when they went to open the doors or close the doors they
19 didn't de-pin the weight basket and put a torque on the doors. Processing this stuff
20 doesn't go perfect. You wish they would, you look at it after the fact and you find out
21 that. When I left here I went to, did a lot of failure review boards for expendable
22 hardware. And, it's very obvious to me, I've had a lot of opportunities to look at
23 problems in either, flight problems or problems that happen on the ground and every

1 one related to one of two things and primarily they go back to people just, people make
2 a mistake. And it's always been that way and it always will be that way. So people
3 have to be constantly reminded of the importance of what they are doing a second set
4 of eyes for key tasks are value added in my view. There are people that will argue
5 otherwise, that will say that a second set of eyes relieves the pressure on the person
6 who is doing the work to be sure that they've done it correctly and I don't know what's
7 right or wrong. I always favored a second set of eyes and you have to stop somewhere.
8 You can't do it for everything. But the point of it is that, that's an area that has to be
9 constantly worked on. And, the things that we did to make sure that the paperwork was
10 clean, they used to have apparently before launch, the night before launch, they were
11 closing paper like crazy here. Like crazy. That was one of the proper criticisms that
12 was made of the way they were doing business here. And not after we started return to
13 flight. We had that paperwork caught up with us such that the only open paper was that
14 paperwork on the work that had just been accomplished.

15

16 Launius: OK.

17

18 McCartney: So, you could feel and it's just discipline, you know, it's kind of like picking
19 up after yourself or whatever. We picked up after ourselves all the way through this
20 process such that we didn't carry... didn't have a rolling wave ahead of us. And that
21 was easy to do. Just tell the people, make sure the people understand. You see, my
22 philosophy was then and is now, Ivory soap percent of that work force out there, 99.44
23 of 100% of that work force want to do what the management wants them to do. Oh,

1 there's always one or two folks that are, that will kind of push on you a little bit. So the
2 job is, if they're not doing what you want them to do it's just you didn't communicate it to
3 them. You just tell them what you need to be done, be reasonable about it, and they'll
4 go do it. And that's what this whole situation was at Kennedy. They knew how to do
5 the jobs, they were experts at it, they had done it successfully. They had a problem; the
6 Orbiter had a problem. It was not their fault. But they had been swept up in a highly
7 emotional situation and they were anxious never to have another one of those
8 problems, to be another part of it. Yet they were anxious to return to flight.

9

10 Launius: Sure.

11

12 McCartney: And we had the support of everybody, so it was a very easy time to get
13 things done.

14

15 Launius: The return to flight. The actual...

16

17 McCartney: Yes.

18

19 Launius: The actual...

20

21 McCartney: Yes.

22

23 Launius: ...mission with Rick Hauck and...

1 McCartney: Yes, and by the way, Rick and I are very good friends. I felt like Rick
2 ought to feel comfortable and as I used to tell the work force and I really meant it, when
3 you stand there and see that thing lift off you should say to yourself, “I have done
4 everything that could be expected of me to make that a successful and safe flight.” And
5 I said, “Rick, you ought to feel that way about the flight. There’s risk involved with it.
6 We’ll never get the risk out of it, but you ought to feel comfortable that we have done
7 everything necessary to make this a successful flight.” And, yeah, Rick, that was... We
8 rolled that thing to the pad on the fourth of July.

9

10 {laughter}

11

12 McCartney: And folks will tell you that we planned that, and we didn’t plan it.

13

14 Launius: Really?

15

16 McCartney: Yeah. It just turned out to be the day that it turned out. Good omen, good
17 omen.

18

19 Launius: Yeah. Well, the flight went well.

20

21 McCartney: Sure.

22

23 Launius: Everyone seemed to be, appropriately I think, proud that they...

1 McCartney: You bet.

2

3 Launius: ...were able to return to flight.

4

5 McCartney: And they were, they felt good about themselves.

6

7 Launius: Um-huh.

8

9 McCartney: Really felt good about themselves and rightfully so, rightfully so.

10

11 Launius: And, were there, I mean obviously this was the first flight after

12 Challenger...

13

14 McCartney: Sure.

15

16 Launius: ...so clearly there would have probably been an emphasis that was

17 greater than maybe would be coming down the road in terms of everybody double

18 checking and triple checking.

19

20 McCartney: No, not when I was here.

21

22 Launius: OK.

23

1 McCartney: And I have no reason to believe it's any different now.

2

3 Launius: OK.

4

5 McCartney: You know, I don't know of anyone who doesn't do the necessary checks

6 and balances now. The system ought to be set up such that each flight is everybody's

7 done everything possible to make it successful. So, you know we flew some vehicles

8 here that had the nuclear powered...

9

10 Launius: Yeah, the RTGs.

11

12 McCartney: RTGs.

13

14 Launius: Right.

15

16 McCartney: And also a form of them on the expendables and everybody gets all hyper

17 and rightfully so about them and I'm not going to try to determine whether that's the right

18 thing to fly or not, if it's worth the risk or not. But they say, "You know, what have you

19 done different?" Not a thing. You know, if you can figure out any way to make that

20 Orbiter safer to fly out there, practical, NASA would jump at it (snaps fingers) that quick

21 because there is nothing more devastating than the loss of a mission.

22

23 Launius: Right.

1 McCartney: And particularly when you have human lives involved. So you know, you
2 just need to keep reminding folks, that “Hey, if you’ve got a better idea to make this
3 thing safer.” Now you can’t be, you can’t be, what do I want to say, imprudent in costs.

4

5 Launius: Right.

6

7 McCartney: So I don’t disregard that the efficiency of the operation, but the number
8 one, costs and schedules, which are carefully linked are important, but nowhere near as
9 important as a safe flight. And that was certainly the attitude that we preached then and
10 I think it’s the attitude that’s preached now.

11

12 Launius: Oh, we’ve flown more than 75 times since...

13

14 McCartney: You bet. The most reliable vehicle in the world.

15

16 Launius: Right.

17

18 McCartney: You know, the record nearest to it right now that I know is the Atlas record.

19

20 Launius: Right.

21

22 McCartney: They’ve got 55 flights or something successful. But, you know, you’ve had
23 one failure out of over 100 flights and no other space vehicle, no other ballistic missile,

1 well maybe MX hasn't had the catastrophic failure, but that's not fair to consider that,
2 and I guess the Poseidon or the Trident people would argue with a little of that, but
3 that's not fair, certainly nothing compares to the reliability of the Orbiter. Is it, does that
4 come easy? No. Does it come cheap? No. But to think of this nation not having an
5 Astronaut Corps and not being involved in manned space flight would in my opinion be
6 a very improper thing. It's just, you know, the country should remain involved in it. And
7 we as a nation should pay the costs associated with that. Be willing to pay the costs
8 associated with it because as I say, we get many spinoffs. If there's anything this nation
9 needs, it needs to instill into the young people, particularly the kids in school, a desire to
10 understand what they want to do and be when they grow up. And I think the space
11 program has stimulated young people in this country far more than we can imagine to
12 stay in school and be a part of it.

13
14 Launius: Right.

15
16 McCartney: I know I used to get a lot of correspondence from kids. And I answered
17 every one of them by the way. Handwrote them a note, but I used to tell them, you know
18 study hard and grow up and be a part of the National Space Program. And I believe
19 that.

20
21 Launius: Henry, did you have a question, or Lisa?

1 Malone: I was wondering if you, having spent a lot of time in the military, how was it
2 different for you coming into a civilian organization like this in terms of just the culture
3 and working...

4
5 McCartney: Well, Lisa, I'm not a typical military fellow. I came in the military and I got
6 in the R&D business and the space business and I never did anything else. So, I really
7 wasn't regimented into the flying and fighting part of the Air Force. So the transition to
8 this business was just more of what I had been doing all along. So it was a very easy
9 transition for me. I'm a very disciplined person, as you know, and, so applying the
10 lessons that I had learned on just good management and so it was not a problem at all.
11 As a matter of fact, the transition, I really had a lot of uncertainty about it. I didn't know
12 if I had done the right thing or not. See, I had thirty-three and a half years in the Air
13 Force when I came here. And, you know, that's the path you've been going for a
14 considerable length of time and to say, "Now I'm going to go start something new," in an
15 area which I didn't know if I'd be accepted by NASA. I didn't know if I'd be accepted by
16 the work force. I know if I didn't, you know, I just had many uncertainties just as the
17 work force had many uncertainties as to whether or not, as to what I was going to do. I
18 had just as many as to how it was going to be. But, it wasn't one from a transition from
19 a difference in the way I had been doing business. It was more one of a transition to an
20 acceptance of me. And as I say it turned out to be a great, great ride for me and I think
21 one that the work force was comfortable with. But it was not hard for me to transition
22 from the Air Force here. It was, like I say, they thought I was going to militarize KSC...

1 {laughter}

2

3 McCartney: ...and they wound up civilianizing me.

4

5 Malone: Yeah. Another question is kind of a big picture feature looking, what do
6 you expect this nation to do in the way of space programs? And, however far out you
7 want to go.

8

9 McCartney: Well, as I told you a little earlier, Lisa, if I had a long suit it's looking at near
10 term. Certainly I will acknowledge that I have a very major flaw in looking long term, but
11 there are several things that disturb me about NASA today that I don't have a solution
12 for, but NASA's budget is flat. It's running at about 14 billion dollars give or take a little
13 bit. And I don't see that changing significantly. It may wave a little bit. When we were
14 building things, as a matter of fact Bob Sieck and I were talking about that at lunch
15 today, you know, I get together about every four or five weeks and talk about, we were
16 talking about it at lunch today. So much of NASA's budget now is going into what I'll
17 call O&M, care and feeding. You know, and that's one thing I don't think that we want to
18 see and remind me to get back to KSC, ok, and the organization. And I don't know how
19 you're going to spin this off to industry. I don't think you're going to spin it off to
20 industry. Industry is not going to take on anything that they can't make a profit on. And
21 it's just that clear. Gee, I spent the last six years in that business and if you don't make
22 a profit the company's not going to stay in business. And as you know in the

1 expendable business today we have twice the capacity than we have customers, it's a
2 dog eat dog cut-throat business.

3

4 Malone: The world market wise

5

6 McCartney: The world, market wise...

7

8 Launius: The projections look like it's going to get worse in the future.

9

10 McCartney: Lockheed-Martin is investing a billion dollars in a new expendable launch
11 vehicle, of corporate money. Boeing is investing at least that much if not more. You
12 could take that money and put it in a money market and make a better return on your
13 investment than they're going to make on that. So, you know, the point of it is, it's a
14 difficult business to be in, I forgot where you had me going.

15

16 Malone: Oh, I was wondering what, where you expect KSC...

17

18 McCartney: Oh, oh, oh. So, you know trying to get industry to take on something that
19 is not going to at least allow them to break even. They're not going to do it. So, what
20 NASA has on their hands is a group of tools and instruments and hardware and that's
21 the Orbiter, the Space Station, the many, many absolutely unbelievable satellites
22 they've launched, Hubble, you know, Cassini, all of this stuff out there that is absorbing
23 a large portion of the infrastructure to support it, a large portion of their budget. And if

1 their budget is going to stay fixed, how do they get out of that box so that they can
2 continue to develop things like the follow-on to the Shuttle. No one gets more thrill or
3 more amazed at looking at pictures than I do for the Hubble. You know, you look at that
4 and you say to yourself... it's just beyond belief what the exploration programs have
5 given us to work on. So, you know, my concern is NASA's budget will continue, and it's
6 the concern of an awful lot of people, to become consumed by what I will call the care
7 and feeding of the infrastructure, and I don't mean the people or that but. An article was
8 in the recent paper about the condition of the infrastructure here at Kennedy and I'm
9 sure it's no better than it was when I left and it was a concern then. Much of the stuff is
10 aging, so, you know, how are the nation, now, do I see a reawakening of the nation to
11 saying, "It's worth a, what do I want to say, the sacrifices to go do things in space by
12 increasing the... the NASA budget?" No. There's no question in my mind we can go to
13 Mars if we wanted to and had the resources. You know you can do anything if one, you
14 don't violate the laws of physics, and two, you've got enough resources. And I believe
15 that we can go to Mars and return without violating the laws of physics. I believe we
16 could find a way, if we wanted to do it, if we had enough resources to do it. I do not
17 think this country is willing to devote that amount of resources at this time to go do that.

18

19 Launius: Right.

20

21 McCartney: Whether that's right, wrong, good, or bad, I think that's the situation we
22 have. So my concern for NASA is how are they going to get out of this hole they're in
23 where they have created all of the tools to do so many great things, but the cost of

1 operating those tools is consuming so much of their budget that it will restrict them from
2 the next step in doing these great things. And that's a challenge. And the economy of
3 the country, you know, is in the downswing, I'm not sure as I said earlier, before I think
4 we started taping this, I'm not sure today you could get the nation to spend what it spent
5 to go to the moon. And that was a long time ago when we went to the moon. A long,
6 long, long time ago. And the bud on the rose when we went to the moon [fell] off. All
7 you've got to do is go out to the Center here, or up to Huntsville, or the Visitor's Center
8 here, or out at Johnson and you see three flight vehicles that the country wasn't willing
9 to spend the money...

10
11 Launius: Right.

12
13 McCartney: ...to go fly. We've been there, done that, bought a T-shirt, what's next.
14 So I think that whether it's right, wrong, good, or bad I think trying to get the country
15 excited about space I think that, probably that's going to be a task. You say, "Well, what
16 would it take to get them excited?" Gee, I don't know. If I knew that I'd probably be the
17 Administrator of NASA.

18
19 {laughter}

20
21 McCartney: What do I see about Kennedy? I see Kennedy becoming more of an
22 extension of Houston. You know, I'd laughingly call it Houston east. Kennedy had a
23 budget when I was here. That budget now is controlled out of Houston. And that

1 disturbs me. You see, in getting back to what Kennedy does best, is Kennedy does
2 best in processing that Orbiter. And I think the program office of the Orbiter ought to be
3 here, mission planning ought to be still done at Johnson. All those things I'm not trying
4 to say, but I'm saying, you know, one thing that perhaps would be meaningful, is if you
5 could get some, and I'm not sure you could do it, but get some independent evaluation
6 of value added. That's an important term, value added. And if it's not value added,
7 then you know, you ought to do something about it. For example, I contended before I
8 left here, I contend now, that you ought to refurbish those Orbiters here. Yet, we don't
9 do that and we all know the reasons for it. There are many reasons and perhaps in the
10 long run that's the thing to do. But why are you sending Orbiter's all the way across the
11 country to a facility that doesn't have a standing work force that they have to retrain to
12 do something that the people here know how to know better than anything else. You
13 know, you said yourself, gosh, you know, so I'm sure there are many things that are
14 driven and a lot of people would disagree with that. But I think, one thing that bothers
15 me about Kennedy is that Kennedy should be a more important cog in determining their
16 future and a more important cog in doing what they do best which is to process that
17 hardware. Nobody knows more about it than they do. People can say, "Oh, but we
18 designed it." You can't go out there today and find a handful of people that designed
19 anything on that Orbiter originally. It's just like, you know, the worst, probably one of the
20 worst places you could go to get an A-Model Ford fixed is back to the Ford factory. You
21 go to people who still got them. Right? Well the people who designed the A-Model,
22 built the A-Model, have come and gone at Ford. I'd go to a '36 Ford probably, or pre-
23 war, World War II Ford, but the point I'm making is that people who know the most

1 about the Orbiter are here and I think it would be wise to try to see how to better utilize
2 this capability. That's one way of putting it. Isn't it?

3

4 Malone: OK. Henry, did you have anything?

5

6 Dethloff: That's good. You answered my question.

7

8 Launius: Oh, Lee Snaples over here has got a quick question.

9

10 Lee Snaples: General, I had a couple of questions.

11

12 McCartney: Sure.

13

14 Snaples: Going back to the period immediately after Challenger. It has been
15 suggested by several, and you seem to agree, that there really wasn't much wrong here
16 and that perhaps NASA overreacted. How many of the changes that took place, in
17 general, would you say took place more to meet external concerns rather than internal
18 needs?

19

20 McCartney: I'd say 90% of them. I'll give you a good example of that. What caused
21 the Challenger was obviously a temperature problem. We could have gone back flying
22 if you just didn't fly temperature-wise. Now you know, why didn't we? And the question
23 was, and the country I guess didn't want to do that. But I will tell you now as a military

1 guy, if we had been dependent upon that for national security, if I had been sitting in the
2 decision for it, I'd say, "OK, we understand that unfortunately we can't fly in that cold an
3 environment. We just fly on hot days." Or we'll heat that hummer up before we fly it.
4 I'm sure you could have gone transitioning to build a better joint, more whatever, all the
5 things that they did. But what NASA did was opened the books and said, "Gosh,
6 anybody got anything they'd like to change? Anybody got any concerns about
7 anything?" And one of the things that used to bother me most of all about sitting
8 around, pardon me, in NASA meetings on return to flight is that I don't care who you
9 were somebody'd figure out something you could test more, whether it was value added
10 or not, they'd suggest it and they go do it. Everybody was so anxious to make this thing
11 as safe as they could to fly it. That anybody who had an idea that was even remotely
12 concerned to safety people erred in the direction of doing it. So, you know, is that good
13 or bad, I don't know, you got a better Orbiter out of it. You got a lot of safety things
14 done, you got more margin. You can't argue against that. Painful, it took two and half
15 years to get back flying again, but that's behind us. That's behind us, not ahead of us
16 and, maybe it was a good investment, but at the time it was painful. It was very painful,
17 because if we had needed to fly, maybe the country decided, the decision makers
18 decided, certainly above my pay grade, decided we didn't need to fly. But, if we had
19 needed to fly we could have flown. You flew, twenty some odd times successfully
20 before and now you know it's kind of like, now trying to think around, something around
21 the house, you know, like mowing the yard. You know, if you stick your foot under the
22 lawn mower you're going to get clipped, so what do you do? You know, you don't quit
23 mowing your yard. You don't design a new lawn mower, you say, "Dummy, keep your

1 feet out from under the lawn mower.” Right. So I think we could have gotten back flying
2 again sooner, but I think whoever made those decisions, made the decisions that they
3 wanted to get all these safety things done and they did and it was a long time before we
4 flew.

5
6 Snaples: How much is the stagnation of the NASA budget and perhaps a loss of
7 national interest in flight responsible, NASA’s fault in effect, for not doing a better job of
8 promoting their projects and what they do for the country?

9
10 McCartney: I don’t know what NASA can do. You know, I thought a lot about that
11 when I was the Center Director here. And one of the things that I made a conscience
12 effort to do was to get as many important people as I could to come down here who
13 could understand what they were looking at to see this hardware, see how it was
14 processed, and to be here for a flight. If you can witness one of these flights and not
15 have a lump in your throat and you know, a tear in your eye you're different than most
16 people.

17
18 Launius: That’s right.

19
20 McCartney: And once people come down and see this sort of thing they view it all very
21 differently. You know, for example, I like race cars. I like NASCAR, citadel for racecars
22 is Daytona. I used to have a lot of those people come down here. And, you know,
23 people like the chief engineer for Chevrolet came down here and he was absolutely

1 appalled at what it took to do all of this. His question was, “How do you get these
2 people working together?” Now how do you get so many people focused to, you know,
3 do the things right the first time? And he was just absolutely appalled by the many
4 systems that had to be integrated to do it. You know, I had Congressional people down
5 here. I don’t know how you get the, it’s just a publicity thing and NASA can not get out
6 front on publicity or they’ll be criticized for that. And Daddy [Mac] used to have a
7 saying, “Hell if you do and hell if you don’t.” So, you know, what could NASA do better
8 than they do. Boy, I don’t know. I am sure there are many things and day to day things
9 that you can see but... One of the things that I thought NASA did extremely well,
10 extremely well, and they never, people never really realized it is the way they handle
11 themselves with the teachers. You know, all of the teacher programs to rotate them
12 through, the kids, all that is, “showmanship”. Could be, you know, out of my hair, I
13 haven’t got time to do that. Man, that’s where you get the support. We used to have,
14 what we used to call it down here, what was the program that the teachers used to
15 come through on? You know, about forty or fifty of them. They gave me, I’m
16 embarrassed they gave me a manatee statue.

17

18 Malone: Nuture.

19

20 McCartney: Yeah, no, no. That’s the kids.

21

22 Malone: There’s a lot of them...

23

1 McCartney: MASS?

2

3 Malone: ...thirty or forty of them, NEWMASS.

4

5 McCartney: NEWMASS. You know, I used to get letters from those teachers.

6 Unbelievable letters. I spent a lot of time with those teachers when they were down

7 here. I used to answer every one of those too with a handwritten note. But the point of

8 it is that selling NASA is a very difficult job and I don't know how NASA could do it.

9 They can certainly do it better than they're doing it. Having said that I don't have any

10 suggestions for it.

11

12 Snaples: Along those lines, how much importance do you place on the Visitor's

13 Center?

14

15 McCartney: Oh, I'm, sorry I didn't mention that sooner. Boy do I ever kick myself for

16 not renaming that thing out there. Spaceport USA was always difficult for me and if I'd

17 just been smart enough, Lisa, I'd have done it. I think it is one of the most important

18 things that we got going. You know, I think that educating and letting the public see

19 what their tax dollars, less than a penny of their tax dollar is spent on space, less than a

20 penny. Now what's our budget, one-point-three trillion or some such nonsense as that?

21

22 Launius: One-point-seven this last year.

23

1 McCartney: And you know, you say, “How much are we spending on space?” You
2 know, you tell people, “Less than one penny of your tax dollar goes to not only what you
3 see here, but what’s the rest of NASA.” And you say, “There’s no better bargain
4 anywhere.” So, you know, to get those people, I can’t say enough good things, and I
5 also tell you that I think it’s managed much better than it was when I was here. It’s a
6 much better showcase than it was when I was here and I just applaud the people who
7 have had the foresight to improve that thing out there. You know, for example, the
8 Saturn V facility...

9

10 Launius: Oh it’s wonderful...

11

12 Snaples: Gorgeous.

13

14 McCartney: It is. The only thing that they haven’t done that I thought they would have
15 done by now and, oh what’s his name...

16

17 Malone: Delaware North guy?

18

19 McCartney: No. The civil servant that was out there for so many years.

20

21 Malone: Arnold?

22

23 McCartney: Yeah!

1 Malone: Richmond?

2

3 McCartney: Arnold Richmond. You know, they used to claim and I believed that he
4 had a scheme to put a revolving restaurant on top of the VAB.

5

6 {laughter}

7

8 Launius: Sounds like a pretty good idea.

9

10 McCartney: Yeah. I used to accuse Arnold of that, but I think it's great. So I think the
11 Visitor Information Center is a very important part, probably the most important center
12 for all of NASA. And I'd say the second one is probably Johnson and probably the third
13 one is up at Huntsville, Alabama. But it's a super center. As a matter of fact, Rick
14 Abramson has said the right thing, when he says, "Some day we'll make this to where
15 people come to Florida to go to the Kennedy Visitor Information Center. And oh, by the
16 way, while they're here they'll go see Disney. Rather than the other way around."

17

18 Snaples: That's all I had.

19

20 McCartney: Thank you.

21

1 Launius: Just in closing, unless you have better questions, Henry or Lisa, any
2 specific comments, suggestions, philosophy of life, comments for young engineers, for
3 people working at KSC, for NASA officials...?

4

5 McCartney: Yeah, yeah I do.

6

7 Launius: OK.

8

9 McCartney: Boy I've been misinterpreted so many times on this. I never was
10 misinterpreted here, but I certainly was on the other side of the river. You know, life is
11 too short to not enjoy what you do and you ought to get up in the morning and look
12 forward to going to work. You ought to feel good about what you do. You ought to feel
13 good about what you accomplished and when you go home at night you ought to have a
14 self-satisfied feeling about it. And I summarized that as whistle, you ought to whistle
15 when you go to work, you ought to whistle when you go home. And if you're not able to
16 do that you ought to go find a job somewhere that you can do that, because life's too
17 short and your health is too fragile to go through life not doing what you want to do. And
18 as I look back I find that two or three things, is that I was probably one of the luckiest
19 people in this business around because I just happened to fit into this puzzle at a time
20 when it was right for me to fit into the puzzle at that time. For example, Roy Bridges
21 today is doing, you know, a lot of long range planning. Thank goodness I'm not here at
22 that because that's not one of my long suits at all. I just don't do that well at all. So, you
23 know, I just happened to come along at the right time to where I could whistle when I

1 went to work and whistle when I went home and if I look back on my almost fifty years of
2 working I can't think of times to whistle better. And you don't do that every day, I
3 understand that, than at my tour at Kennedy. So, you know, I look upon it as a unique
4 opportunity. I came at the right time. It was difficult to leave, very difficult to leave, but it
5 was an opportunity to be a part of something that I enjoyed very much and we were
6 very successful at and we can all be proud of it and we can point to it with great pride
7 and the nation's better for it and you can't beat that.

8

9 Launius: Right.

10

11 McCartney: And I really believe all that.

12

13 Launius: I think that that's all I had. That may be a good place to quit. So thank
14 you very much for...

15

16 McCartney: I'm delighted that you asked me. I always look for excuses to come out to
17 Kennedy.